

Older Driver Working Group
Proposed Strategy for Presentation to the NC ECHS
October 24, 2006

Strategy – Improve the Roadway and Driving Environment to Better Accommodate the Special Needs of Older Road Users: Building Capacity

General Description

Aging baby boomers will have a profound effect on the safety of our nation's roadways, comprising up to one-fourth of all traffic fatalities by the year 2030. If North Carolina is to reduce its fatality rate to the overall national goal of not more than one per million vehicle miles traveled, state and local safety practitioners must begin now to address the special needs of these older road users. By making older road users the new "design driver" for roadway design and traffic operations, safety will be improved for everyone.

The *Highway Design Handbook for Older Drivers and Pedestrians*, first released in 1998 and updated in 2001, provides a comprehensive set of recommendations and guidelines for accommodating an aging road user population. The *Highway Design Handbook* does not establish new standards of practice, but rather is intended to supplement existing standards and guidelines contained in the AASHTO Green Book, MUTCD, and other commonly accepted guidance documents. It contains more than 100 individual recommendations addressing signage, intersection design, traffic control and operations, roadway delineation, and other areas of particular importance to older road users. In deciding upon which recommendations to include in the *Handbook*, emphasis was placed on improvements that could be accomplished at relatively low cost and within a reasonable time frame, i.e., what would give state and local transportation departments the greatest return on their safety investment.

Since 1998, FHWA has offered a one-day training workshop to transportation planners, engineers, and other practitioners through state DOTs and others (ITE chapters, LTAP, etc.), based on the *Highway Design Handbook*. Interactive methods are used to help participants fully understand the changes that occur with aging, and case studies offer an opportunity to test out new knowledge. If desired, states can participate in a "train the trainer" program in which two or more representatives are trained and certified to conduct additional workshops and training sessions.

North Carolina was one of the first states to host one of the FHWA workshops. However, it has been over five years since the training occurred, and many local engineers and planners in the state have never been exposed to the material in the *Handbook*, or sensitized to the special needs of an aging population of road users. As part of this strategy, NC DOT would lead efforts to:

- a) Host three FHWA *Highway Design Handbook for Older Drivers and Pedestrians* Practitioner Workshops;
- b) Participate in FHWA's "train the trainer" program, and identify an approach for ensuring that the Workshop or comparable training can be offered to additional engineers and

planners in the future (e.g., through collaboration with University engineering and planning departments, ITE, ITRE);

- c) Review current state standards to determine their compatibility with the recommendations in the *Highway Design Handbook*, and consider modifications to the standards as appropriate;
- d) Continue to analyze state crash data to identify locations and situations in the state that pose a particular risk to older drivers and take steps to remedy these, drawing from the *Highway Design Handbook* and engineering expertise and judgment;
- e) Document changes made and evaluate the effectiveness of the changes.

Technical Attributes	
Target Audience	State and local traffic engineers, planners, and other transportation practitioners.
Expected Effectiveness	<p>Although FHWA has funded demonstration projects to evaluate the effectiveness of several of the recommendations included in the <i>Highway Design Handbook</i>, further research is needed to quantify the safety benefits of the many various recommendations.</p> <p>Nevertheless, there is general consensus that implementation of the recommendations, as a whole, will benefit not only older road users but all road users. Thus, for example, larger signage and improved roadway delineation will help the older adult with reduced visual function and slower reaction time, but will also provide a greater margin of safety for the alcohol-impaired driver, the drowsy driver, or the driver engaged in a cell phone conversation, all of whom are not operating their vehicles at optimal capacity. In addition to increasing safety, it is anticipated that implementation of the recommended changes will make driving easier for older adults, thus improving their overall mobility and their level of satisfaction with the driving environment.</p> <p>Iowa and New Jersey have successfully implemented FHWA's "train the trainer" program, and can serve as a model for North Carolina in setting up its own program. Florida is poised to undertake such activity.</p>
Keys to Success	A primary key to the success of this strategy is commitment by NC DOT to ensuring that the target audience of state and local transportation engineers and planners is reached by the workshops. It will also be critical for NCDOT to follow through with actual implementation of the strategies where appropriate. Where recommendations in the <i>Handbook</i> vary from current State standards of practice, a willingness to implement the recommendations on a pilot or trial basis, closely monitoring their impact, will provide the greatest opportunity for success of this strategy. Another key to success will be continued analysis of crash data to identify those locations in the state that are most likely to see a reduction in older driver crashes if the recommended changes are implemented (see companion strategy).
Potential Difficulties	<p>As noted above, the <i>Highway Design Handbook</i> contains over 100 recommended strategies for improving safety for older road users. This may lead to difficulties in prioritizing changes for implementation. And even though the recommendations were made with an eye towards efficiency in commitment of time and dollars, the sheer number of recommended changes, and the volume of roadways in the state, can prove daunting, even when considered over the long haul as roadways are reconstructed or maintained and signs replaced.</p> <p>On the plus side, North Carolina already incorporates many of the recommendations into its standards of practice, which is why a review and comparison of the <i>Handbook's</i></p>

	recommendations and current NC practices has been incorporated into the strategy.
Appropriate Measures and Data	<p>Documentation should be maintained of roadway improvements implemented, and statewide crash data analyzed to reveal any changes in crash occurrence that might be associated with these improvements. More in-depth evaluations, including collection of crash and, to the extent possible, exposure data should be considered at pilot site programs.</p> <p>At the process level, data should be maintained documenting the number of workshops hosted, the number of individuals participating in the workshops, and the professions represented. In addition, it would be useful to obtain feedback from participants regarding the usefulness of the workshop, both immediately upon its conclusion and some time (e.g., 3-6 months) in the future.</p>
Associated Needs	None identified, other than facilities for hosting the workshop(s). FHWA provides all workshop materials.
Organizational, Institutional, and Policy Issues	As noted above, there may be instances where recommendations in the <i>Highway Design Handbook</i> go beyond, or are in conflict with, current State practices. These differences will need to be resolved by an appropriate authority.
Issues Affecting Implementation Time	FHWA generally requires several months lead time to schedule and present a workshop. Currently we are looking towards hosting three workshops during the week of February 5, 2007 . Any subsequent workshops would be scheduled on an as-needed basis at NCDOT's discretion.
Costs	<p>Costs for conducting the initial workshops for training state and local personnel will be minimal, as FHWA provides the training and materials at no cost to the state. NCDOT (or some other organization, such as ITE) will only need to provide facilities for hosting the workshops and reproducing the required materials.</p> <p>There will be costs associated with providing any future or ongoing training, primarily with respect to instructor time and travel costs. Some or all of these costs may be recovered from course registration fees, an option that will be explored in implementing this strategy.</p> <p>There clearly will be costs involved in implementing any selected roadway improvements. These costs will vary depending upon the improvement and the scope of its implementation (e.g., statewide versus at a single pilot location).</p>
Training and Other Personnel Needs	Individuals will need to be identified to participate in FHWA's "train the trainer" instruction who can help lead future workshops across the State.
Legislative Needs	None identified.

Resources

Staplin, L., Lococo, K., Byington, S. and Harkey, D. (2001). Highway Design Handbook for Older Drivers and Pedestrians. Federal Highway Administration. Report No. FHWA-RD-01-103. [Available <http://tfhrc.gov/humanifac/01103/coverfront.htm>]

Harkey, D.L., Lococo, K and Staplin, L. (2001). Highway Design Handbook for Older Drivers and Pedestrians: Workshop Instructor's Manual.

McDonald, T.J. (February 2006). Engineering Roadways for Older Drivers Workshops. Iowa Department of Transportation.

Also, slides and materials from the Workshop.